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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/824,143 | 04/03/2001 | Yoshiyuki Yasui | 003510-089 | 8922 |
| 7590 | 07/13/2005 | | EXAMINER | |
| Platon N. Mandros BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404 | | | KING, BRADLEY T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3683 | |

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/824,143 | YASUI ET AL. | |
| | Examiner | Art Unit | |
| | Bradley T. King | 3683 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 June 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2-8 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 18-30 is/are allowed.
- 6) Claim(s) 2-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0825080.

EP 0825080 discloses all the limitations of the instant claims including: speed detecting means for detecting wheel speeds of respective wheels of a vehicle; road surface mu slope estimating means 12 for, on the basis of the detected wheel speeds 10, estimating for the respective wheels slopes of a coefficient of friction mu between the wheels and a road surface as road surface mu slopes; control means for, on the basis of the road surface mu slopes estimated for the respective wheels by the road surface mu slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and wherein on the basis of the detected wheel speeds, the road surface mu slope estimating means estimates slopes of braking forces with respect to wheel slip speeds as the road surface mu slopes for the respective wheels, and the control means controls a braking torque of a wheel which is an object of control using the road surface mu slope of the wheel which is an object of

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control and the road surface mu slope of a reference wheel among the road surface mu slopes estimated by the road surface mu slope estimating means. Note the embodiment of figure 42, steps 408 and 414. The low mu wheel is the reference wheel. If the mu difference is less than a predetermined value, the high mu wheel (object of control) is controlled based on its mu slope, otherwise it is controlled based on the mu slope of the reference wheel.

Regarding claim 3, EP 0825080 estimates the mu slope of a reference wheel and then performs follow-up control on a wheel which is the object of control according to wheel speed (and therefore wheel slip) since the object wheel is assumed to have the same mu. When there is variation of the wheel speeds, there is also a variation in the road mu slope between the wheels and the device increases or decreases the braking force so that the speeds are equal. See the description of feed-back control on page 44. Note the claim language describes the behavior with respect to variations in mu slopes, but fails to positively recite any direct measurement and comparison of the mu slopes.

Regarding claim 5, see page 17 last paragraph. EP 0825080 teaches the use of the rear wheels as reference wheels.

Regarding claims 6-7, the braking device of EP 0825080 will behave as claimed when the reference wheel happens to be on the inside of a turn (or outside for claim 7). The claim language fails to require any turn recognition.

Regarding claim 8, see figure 43.

Allowable Subject Matter

Claims 18-30 are allowed.

Response to Arguments

Applicant's arguments filed 6/27/2005 have been fully considered but they are not persuasive.

Regarding Ono et al, it is maintained that the reference "uses" the mu gradient of both wheels to ultimately control the braking force of the object wheel. The claims do not require that both gradients be used at the same time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T. King whose telephone number is (571) 272-7117. The examiner can normally be reached on 11:00-7:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BTK

Robert A. Siconolfi 1/11/05
ROBERT A. SICONOLFI
PATENT EXAMINER